

Date: Thu, 24 Jun 93 22:05:14 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V93 #778
To: Info-Hams

Info-Hams Digest Thu, 24 Jun 93 Volume 93 : Issue 778

Today's Topics:

 [ANS] Wanted: Simple,Cheap,2m antenna project
 Daily Solar Geophysical Data Broadcast for 24 June
 Radio Shack 2m HT Mods and Problems
 Re: "Assualt" radio ban
 Repeater Enclosures?
 STS-57 Element Set GSFC-014
 Weekly Solar Terrestrial Forecast & Review for 25 June

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 24 Jun 93 06:45:08 EDT
From: swrinde!cs.utexas.edu!math.ohio-state.edu!darwin.sura.net!sgiblab!wetware!
spunky.RedBrick.COM!psinntp!psinntp!arrrl.org@network.UCSD.EDU
Subject: [ANS] Wanted: Simple,Cheap,2m antenna project
To: info-hams@ucsd.edu

In rec.radio.amateur.misc, gary@ke4zv.uucp (Gary Coffman) writes:

>In article <1637@arrrl.org> zlau@arrrl.org (Zack Lau) writes:

>>

>>Keep in mind that losses in loaded HF verticals can be quite
>>high, regardless of what material is used for the coil form.
>>The PVC may melt even if it contributed no additional losses,
>>simply because it is surrounded by hot wire. Anyone actually
>>measure the additional losses caused by PVC?

>

>PVC is somewhat more lossy than some other plastics. One test

It certainly is, I often use Teflon myself, to get lower losses. Cost isn't as much of a problem when you buy intelligently at flea markets. (I'm assuming you have the skills to do so :-))). The favorite of the old timers was polystyrene, except that it melts and cracks very easily. Its probably not suitable for *indoor* antennas, much less outdoor ones, due to mechanical reasons.

>I've seen is to try it in the microwave oven. (PVC melts, microwave
>safe plastic dishes don't. However, either will melt on a stove.
>So the difference is at least partially due to the difference in
>RF absorption. I'd imagine it's frequency dependent to a degree.
>I use PVC as standoffs for a gamma rod that matches my tower on
>160 meters. It hasn't melted at legal limit power.

I measured one coil--14 turns of 2 inch .062 diameter wire, 1.8 inches long. Good old Miniductor? Q is pretty decent at 521 (7.9 MHz) Sticking in a long piece of 1.5 inch schedule 40 white PVC tubing slit in half, the Q degrades to 503. Obviously, the Q degradation would be worse if the wire were wound on a PVC form. By contrast, a piece of half inch Teflon noticeably detunes the circuit, requiring the HP Q meter to be retuned, but the change in Q is negligible.

So, is this significant? Well, it depends on how high a Q you really need. For someone designing a 10 kHz LC bandpass filter for 80 meters, even the capacitor Q matters (high quality chip capacitors do better than typical silver micas). On the other hand, if you can tolerate the loss and it won't melt on you, it might well make sense. For instance, there is a company that will plate copper on large teflon tubing for you for that *Ideal* helical antenna, but I'm pretty sure I couldn't afford it.

Zack Lau KH6CP/1

Internet: zlau@arrl.org "Working" on 24 GHz SSB/CW gear
Operating Interests: 10 GHz CW/SSB/FM
US Mail: c/o ARRL Lab 80/40/20 CW
225 Main Street Station capability: QRP, 1.8 MHz to 10 GHz
Newington CT 06111 modes: CW/SSB/FM/packet
amtor/baudot
Phone (if you really have to): 203-666-1541

Date: 25 Jun 93 03:40:21 GMT

From: news-mail-gateway@ucsd.edu
Subject: Daily Solar Geophysical Data Broadcast for 24 June
To: info-hams@ucsd.edu

!!BEGIN!! (1.0) S.T.D. Solar Geophysical Data Broadcast for DAY 175, 06/24/93
10.7 FLUX=121.4 90-AVG=113 SSN=066 BKI=3453 4433 BAI=023
BGND-XRAY=B6.5 FLU1=4.3E+06 FLU10=2.0E+04 PKI=3454 4433 PAI=025
BOU-DEV=021,051,071,032,046,058,031,038 DEV-AVG=044 NT SWF=03:115
XRAY-MAX= M9.7 @ 0735UT XRAY-MIN= B4.3 @ 0534UT XRAY-AVG= C4.2
NEUTN-MAX= +001% @ 2055UT NEUTN-MIN= -003% @ 2320UT NEUTN-AVG= -0.8%
PCA-MAX= +0.9DB @ 1735UT PCA-MIN= -1.1DB @ 0750UT PCA-AVG= +0.1DB
BOUTF-MAX=55375NT @ 2333UT BOUTF-MIN=55328NT @ 1856UT BOUTF-AVG=55353NT
GOES7-MAX=P:+000NT@ 0000UT GOES7-MIN=N:+000NT@ 0000UT G7-AVG=+074,+000,+000
GOES6-MAX=P:+129NT@ 1637UT GOES6-MIN=N:-106NT@ 0636UT G6-AVG=+096,-025,-059
FLUXFCST=STD:126,132,137;SESC:126,132,137 BAI/PAI-FCST=020,025,015/020,025,015
KFCST=3445 4344 4554 4333 27DAY-AP=020,012 27DAY-KP=4433 3434 4324 1223
WARNINGS=*SWF;*MAJFLR;*PROTON
ALERTS=*MAJFLR:M9.7/2B@0716-0735-0752,S11E64(7529);
TENFLR:390SFU@0722;SWEEP:II=3@0702-0706;**SWEEP:II=3@0732-0736;
SWEEP:IV=3@0659-0900UTC;TENFLR:@1720,DUR=4MIN;
**245STRM:0636-0959UTC
!!END-DATA!!

NOTE: The Effective Sunspot Number for 23 JUN 93 was 80.0.
The Full Kp Indices for 23 JUN 93 are: 3o 2- 1+ 3o 3+ 2+ 4o 3o

Date: 24 Jun 93 17:21:11 EST
From: titan.ksc.nasa.gov!k4dii.ksc.nasa.gov!user@ames.arpa
Subject: Radio Shack 2m HT Mods and Problems
To: info-hams@ucsd.edu

In article <19930622.122648.929@almaden.ibm.com>, salhany@vnet.IBM.COM
(Wayne Salhany) wrote:
> I am trying to find out if there are any simple mods that can be made
> to the Radio Shack 2m HT (extended receive, etc) and if there are any
> known problems with the units.

Wayne-

I've been collecting "trivia" about the HTX-202, hoping to find some grand
modification, but to no avail! Some think it is already as good as anyone
wants. However, the following bits of information may be of interest:

1. It turns out that there are actually two versions of the HTX-202. The
manual that came with the early one did not include the F-Light feature
(turning on the light for an indefinite period), although the radio had the

capability. The later manual did have the feature listed on page 15, at the bottom of the page.

You can tell which version of the radio you have, by checking the frequency that comes up when you reset the microprocessor. The older one resets to 144.-something. The newer one resets to 146.00 MHz.

2. The service manual indicates that peak deviation should be set to 3.8 KHz. That is about what mine was when it came from the factory, although average modulation was not bad. I recommend that you either set peak deviation to 4.5 KHz, or set it to 5.0 KHz with CTCSS turned on.

3. Some of the HTX-202's came with low modulation. The "word" was that you could correct this by adjusting the peak deviation control, RV1, located near crystal X1, on the RF PCB. However, some had other problems, and were still distorted when adjusted. I haven't heard what the actual cause of the problem was.

4. The manual indicates that the "Er1" error code is caused by an internal RAM error. When it occurs frequently, the internal Lithium battery is generally blamed. However, the Lithium battery may not be the only cause of the problem. According to Dave, AC4JX, the "Er1" occurs frequently when using an external 12 volt power supply, and the radio is turned on and off by switching the power supply instead of using the radio's on/off switch. If this is true, it may be that the CPU does weird things when voltage is somewhere between the Lithium battery's voltage, and normal operating voltage, like writing garbage to RAM! An external power supply's voltage can rise and fall at a rather slow rate, which invites the problem.

5. Do some of the HTX-202's have trouble dialing through an autopatch when their signal is weak and noisy? If so, it may be due to the lack of pre-emphasis on the DTMF tones. It may not turn out to be a problem, but this lack of pre-emphasis is the only genuine design flaw I'm aware of!

6. Some repeater autopatches have a problem with the HTX-202's carrier staying keyed after the last digit is dialed. This can be overcome by turning on the "Touch-tone Auto-reply", function Ar in the configuration menu.

7. The Radio Shack "Speaker-Mike" works with Icom and some Yaesu, as well as the HTX-202. Mine sounds at least as good as the HTX's built-in speaker, and cost less than the Icom speaker-mikes. However, I found that my old Icom speaker-mike doesn't work with the HTX. It seems that the resistor used in the Icom microphone, is too high a value to key the HTX's push-to-talk. Icom uses something like 39K ohms, while the Radio Shack speaker-mike uses 2.2K ohms.

8. Although the HTX-202 appears to be Icom "compatible", you may not be able to use an Icom interface cable with the HTX on packet. As mentioned above, the P-T-T resistor must be changed to a lower value to key the HTX-202. If you modify the cable, it should still work with Icom.

9. To get full power from the HTX-202, you must power it from an external 13.8 volt power supply. It turns out that some Icom battery packs are compatible, and are available in higher voltages. Although it runs up your investment in the radio, you could get the 13 volt Icom rapid charge battery, and the Icom BC-35 charger. This large battery allows nearly full power, and 1 or 2 hour recharge. I think the battery is the BP-7. Both the BP-7 and the BC-35 each cost about \$85 at AES, for a total of \$170.

10. I don't know how much Radio Shack charges for a replacement battery. If your old battery dies, you can get a refill. Order an "HTX-202 Insert" for \$15, 7.2 Volt 600 mAH, from:

E. H. Yost & Company
7344 Tetiva Road
Sauk City, Wisconsin 53583
Telephone (608)643-3194

Yost may also have the higher voltage battery packs.

11. There have been several reports of a "birdie" signal on 146.76 MHz. It appears to be caused by the 146.761345 MHz, 41st harmonic of the 3.579545 MHz crystal used as the CPU clock. This crystal is also used in the touchtone generator circuit. It would seem possible to pad capacitor C-1018 (20 pf), to move the harmonic off frequency. It wouldn't require much, and probably wouldn't upset either the CPU or the touchtone generator. However, there isn't much space for additional components near C-1018. Further, C-1018 is a chip capacitor that would be damaged if conventional solder were used near it.

73, Fred, K4DII

fred-mckenzie@ksc.nasa.gov

Date: Thu, 24 Jun 93 19:27:44 EST
From: pravda.sdsc.edu!news.cerf.net!usc!howland.reston.ans.net!noc.near.net!
balder!loki!gregb@network.UCSD.EDU
Subject: Re: "Assualt" radio ban
To: info-hams@ucsd.edu

Why not get a 2 meter HT, along with a wide band rcv such as the ICOM W2A? I think that's the right model #, in any case it rcvs

100k-1g in all modes except ssb. I had one for a while, but just wasn't into receiving. It would rcv air band (unmodulated fm on 108-135mhz), police, fire cellular etc...

Greg

Date: Thu, 24 Jun 93 07:56:15 EDT
From: phsbbs!n2gj@princeton.edu
Subject: Repeater Enclosures?
To: info-hams@ucsd.edu

H E L P !!!

I am a control operator for the 146.46 repeater in Princeton, NJ. We are looking for a weatherproof outdoor enclosure for our machine and controller.

It should have front and rear rack rails and should have the following dimensions (at the absolute outside!):

39 inches high
24 inches wide
42 inches deep

We suspect that we are going to have to find someone who makes such a box, but so far we have come up empty using the usual suspects! Is there someone else out there in repeater land who has run into this problem and found a good solution? Can you help us? Could you drop me a message or call and let me know where we might find help? Thanks!!!

73,

Gerry

Gerald J. Jurrens N2GJ | Black holes are where God divided by zero!
Mathtech/Box 147 | Internet : n2gj@phsbbs.princeton.nj.us
Kingston, NJ 08528-0147 | Packet : N2GJ@K2PJ.NJ.USA.NOAM
(609) 520-3847 office | GEnie : G.JURRENS

Date: 24 Jun 93 22:38:46 GMT
From: news-mail-gateway@ucsd.edu
Subject: STS-57 Element Set GSFC-014
To: info-hams@ucsd.edu

SB SAREX @ AMSAT \$STS-57.009
STS-57 Element Set GSFC-014

The following Keplerian Element Set was generated by Ron Parise, WA4SIR at the Goddard Space Flight Center. Equator crossing occur over one minute later than the JSC-011 which was distributed yesterday.

The next orbit burn is expected to occur at 4/19:00. Launch of STS-57 occurred at 13:07:22 UTC on June 21.

STS-57

```
1 22684U 93 37 A 93175.64821865 0.00000990 00000-0 30148-4 0 145
2 22684 28.4591 292.0278 0005299 194.1335 165.9112 15.29165967 493
```

Satellite: STS-57

Catalog number: 22684

Epoch time: 93175.64821865 (24 JUN 93 15:33:26.09 UTC)

Element set: GSFC-014

Inclination: 28.4591 deg

RA of node: 292.0278 deg Space Shuttle Flight STS-57

Eccentricity: 0.0005299 Keplerian Elements

Arg of perigee: 194.1335 deg

Mean anomaly: 165.9112 deg

Mean motion: 15.29165967 rev/day Semi-major Axis: 6856.4363 Km

Decay rate: 0.99E-05 rev/day*2 Apogee Alt: 481.68 Km

Epoch rev: 49 Perigee Alt: 474.42 Km

NOTE - This element set is based on NORAD element set # 014.

The spacecraft has been propagated to the next ascending node, and the orbit number has been adjusted to bring it into agreement with the NASA numbering convention.

Submitted by Frank H. Bauer, KA3HDO for the SAREX Working Group

/EX

Date: 25 Jun 93 04:26:30 GMT

From: news-mail-gateway@ucsd.edu

Subject: Weekly Solar Terrestrial Forecast & Review for 25 June

To: info-hams@ucsd.edu

--- SOLAR TERRESTRIAL FORECAST AND REVIEW ---
June 25 to July 04, 1993

Report Released by Solar Terrestrial Dispatch
P.O. Box 357, Stirling, Alberta, Canada
T0K 2E0
Accessible BBS System: (403) 756-3008

SOLAR AND GEOPHYSICAL ACTIVITY FORECASTS AT A GLANCE

10-DAY SOLAR/RADIO/MAGNETIC/AURORAL ACTIVITY OUTLOOK

	10.7 cm	HF Propagation +/- CON								SID				AU.BKSR DX				Mag	Aurora		
	SolrFlx	LO	MI	HI	PO	SWF	%MUF	%	ENH	LO	MI	HI	LO	MI	HI	%	K	Ap	LO	MI	HI
--	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
25	126	G	G	F	F	80	-05	70	70	NA	NA	NA	02	15	40	35	5	25	NV	LO	MO
26	132	G	F	P	P	80	-10	65	70	NA	NA	NA	05	35	50	30	5	30	NV	MO	HI
27	137	G	F	P	P	75	-10	55	70	NA	NA	NA	05	35	50	30	5	25	NV	MO	HI
28	140	G	G	P	P	75	-05	55	65	NA	NA	NA	05	30	45	30	5	25	NV	LO	MO
29	145	G	G	F	F	70	00	50	65	NA	NA	NA	10	25	40	30	4	20	NV	NV	MO
30	145	G	G	F	F	70	00	50	65	NA	NA	NA	10	25	35	30	4	17	NV	NV	MO
01	140	G	G	P	P	65	-05	50	65	NA	NA	NA	10	30	40	30	5	25	NV	NV	MO
02	140	G	G	P	P	65	-10	50	60	NA	NA	NA	10	35	50	30	4	22	NV	LO	MO
03	135	G	F	P	P	60	-05	50	60	NA	NA	NA	10	35	50	30	5	25	NV	LO	MO
04	135	G	G	F	F	60	-05	50	60	NA	NA	NA	10	30	40	30	4	20	NV	NV	MO

DEFINITIONS:

Date (day only)

10.7 cm SOLar radio FLux forecast

HF Propagation Conditions for LOW, MIddle, HIgh, and POLar areas (see below)

HF Short Wave Fade Probability (in %)

HF Maximum Usable Frequency in +/- percent above seasonal normals.

HF Prediction CONfidence Level (in %)

VHF Sudden Ionospheric ENHancement Probs (in %), weighted for low-mid lats

PROBability of "s"poradic E (Es) during the UT day for low, mid and high lats

VHF AUroral BackScatter Probs (in %) for LOW, MIddle and HIgh Latitudes

VHF Overall Global DX Potential (in %) - weighted for Low and Middle latitudes

Geomagnetic Activity Kp Index (peak value - see below)

GeoMAGnetic Activity Ap Index (peak value - see below)

AURORAL Activity for LOW, MIddle and HIgh Latitudes (see below)

HF Prop. Quality rated as: EG=Extremely Good, VG=Very Good, G=Good, F=Fair, P=Poor, VP=Very Poor, EP=Extremely Poor.

Probability of Sporadic E (Es) for the various latitudes is given in percent.

Kp Planetary Index rated: 0=V.Quiet, 1=Quiet, 2=Unstld, 3=Active, 4=V.Active, 5=Minor Storm, 6=Major Storm, 7=Maj-Sev Storm, 8=Severe Storm, 9=V.Severe.

Ap Planetary Index rated: 0-7=Quiet, 8-16=Unstld, 17-29=Active,

30-49=Minor Storm, 50-99=Major Storm, Severe Storm >=100.
Auroral Activity rated: NV=Not Visible, L0=Low, M0=Moderate, HI=High,
VH=Very High.

PEAK PLANETARY 10-DAY GEOMAGNETIC ACTIVITY OUTLOOK (25 JUN - 04 JUL)

EXTREMELY SEVERE												HIGH
VERY SEVERE STORM												HIGH
SEVERE STORM												MODERATE
MAJOR STORM												LOW - MOD.
MINOR STORM	*	**	**	*			*		**			LOW
VERY ACTIVE	***	***	***	***	**	*	***	***	***	**		NONE
ACTIVE	***	***	***	***	***	***	***	***	***	***		NONE
UNSETTLED	***	***	***	***	***	***	***	***	***	***		NONE
QUIET	***	***	***	***	***	***	***	***	***	***		NONE
VERY QUIET	***	***	***	***	***	***	***	***	***	***		NONE

Geomagnetic Field	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		Anomaly
Conditions	Given in 8-hour UT intervals											Intensity

CONFIDENCE LEVEL: 55%

CONFIDENCE VALUES ARE RELATIVELY LOW GIVEN THE FACT THAT
LITTLE IS KNOWN REGARDING THE POTENTIAL INFLUENCE THE STRONG
ACTIVE REGIONS ON THE EAST LIMB MAY HAVE ON THE EARTH OVER
THE NEXT WEEK.

NOTES:

Predicted geomagnetic activity is based heavily on recurrent
phenomena. Transient energetic solar events cannot be predicted reliably over
periods in excess of several days. Hence, there may be some deviations from
the predictions due to the unpredictable transient solar component.

60-DAY GRAPHICAL ANALYSIS OF GEOMAGNETIC ACTIVITY

54	J	
51	J	
49	J	
46	J	M
43	J	M
40	J	M
38	MJ	MM
35	MMJ	MM
32	MMJ	MM

```

30 |          MMJ                      MM                      |
27 |          MMJ                      MM                      |
24 |          MMJ                      MM                      A|
22 |          MMJ                      MM      A              A|
19 |          MMJ                      A      MM A      A      A|
16 |          AMMJ      A              AA      AMMAA      A      A|
13 |          AMMJ U A      A              AA      AMMAAU A UU      A|
11 |      U      AMMJ U AUUA      U      AAU      AMMAAU A UUU      UA|
8  |      UUU U      UAMMJ U AUUA UU      AAU      AMMAAU AUUUUU      UA|
5  |U      UUUUUQUUAMMJUUUAUUUU      AAUQQ QAMMAAUUUUUUU      Q QUA|
3  |UQQUUUUUUQUUAMMJUUUAUUUUUUQQQQQQAAUQQQQAMMAAUUUUUUUUUQQQQQQUA|
-----

```

Chart Start Date: Day #116

NOTES:

This graph is determined by plotting the greater of either the planetary A-index or the Boulder A-index. Graph lines are labelled according to the severity of the activity which occurred on each day. The left-hand column represents the associated A-Index for that day.

Q = Quiet, U = Unsettled, A = Active, M = Minor Storm,
J = Major Storm, and S = Severe Storm.

CUMULATIVE GRAPHICAL CHART OF THE 10.7 CM SOLAR RADIO FLUX

```

-----
143 |
140 |          *
137 |          ****
134 |          *          ***** *
131 |          * **          ***** *
128 |          *****          *****
125 |          *****          *****
122 |*          *****          *****
119 |*          *****          *****          *
116 |**          *****          *****          *
113 |***          *****          *****          **          *
110 |***          *****          *****          *
107 |****          *****          *****          **
104 |*****          *****          *****          **
101 |*****          *****          *****          **
098 |*****          *****          *****          **
095 |*****          *****          *****          ***
092 |*****          *****          *****          ***
089 |*****          *****          *****          *****
086 |*****          *****          *****          *****
083 |*****          *****          *****          *****

```

080 | ***** |

Chart Start: Day #116

GRAPHICAL ANALYSIS OF 90-DAY AVERAGE SOLAR FLUX

132 | ----- |
131 | ***** |
130 | ***** |
129 | ***** |
128 | ***** |
127 | ***** |
126 | ***** |
125 | ***** |
124 | ***** |
123 | ***** |
122 | ***** |
121 | ***** |
120 | ***** |
119 | ***** |
118 | ***** |
117 | ***** |
116 | ***** |
115 | ***** |
114 | ***** |
113 | ***** |
112 | ***** |

Chart Start: Day #116

NOTES:

The 10.7 cm solar radio flux is plotted from data reported by the Penticton Radio Observatory (formerly the ARO from Ottawa). High solar flux levels denote higher levels of activity and a greater number of sunspot groups on the Sun. The 90-day mean solar flux graph is charted from the 90-day mean of the 10.7 cm solar radio flux.

CUMULATIVE GRAPHICAL CHART OF SUNSPOT NUMBERS

147 | ----- |
140 | * |

```

133 |          **          ***          |
126 |          ****         *         |
119 |          ****         *         |
112 |          ****         *         |
105 |          * ****        *         |
098 |          *         *         |
091 | *          * ****        *         |
084 | *          *         *         |
077 | **         *         *         |
070 | **         *         *         |
063 | **         *         *         ** |
056 | ****        *         *         ** |
049 | ****        *         *         ** |
042 | ****        *         *         ** |
035 | ****        *         *         ** |
028 | ****        *         *         ** |
021 | ****        *         *         ** |
014 | ****        *         *         ** |
007 | ****        *         *         ** |

```

Chart Start: Day #116

NOTES:

The graphical chart of sunspot numbers is created from the daily sunspot number counts as reported by the SESC.

HF RADIO SIGNAL PROPAGATION PREDICTIONS (25 JUN - 04 JUL)

NOTE: CONFIDENCE LEVELS ARE LOW DUE TO THE UNCERTAIN IMPACT THE STRONG ACTIVE REGIONS ON THE EAST LIMB MIGHT PRODUCE OVER THE NEXT TWO WEEKS.

High Latitude Paths

CONFIDENCE LEVEL	EXTREMELY GOOD												
	VERY GOOD												
	GOOD												
	FAIR	*				*	*					*	
	POOR	* *	***	***	***	* *	* *	***	***	***	***	* *	
	VERY POOR												
50%	EXTREMELY POOR												

	PROPAGATION	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	QUALITY	Given in 8 Local-Hour Intervals											

Middle Latitude Paths

80%												80%							
60%	*				*	*						60%							
40%	***	***	***	***	***	***	***	***	***	***	***	40%							
20%	***	***	***	***	***	***	***	***	***	***	***	20%	*	*					
0%	***	***	***	***	***	***	***	***	***	***	***	0%	*	*	*	*	*	*	*
-----	---	---	---	---	---	---	---	---	---	---	---	-----	-	-	-	-	-	-	-
CHANCE OF	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun		F	S	S	M	T	W	T	F
VHF DX	Given in 8 hour local time intervals											AURORAL BACKSCATTER							
-----	-----											-----							

NOTES:

These VHF DX prediction charts are defined for the 30 MHz to 220 MHz bands. They are based primarily on phenomena which can affect VHF DX propagation globally. They should be used only as a guide to potential DX conditions on VHF bands. Latitudinal boundaries are the same as those for the HF predictions charts.

AURORAL ACTIVITY PREDICTIONS (25 JUN - 04 JUL)

High Latitude Locations

CONFIDENCE LEVEL ----- 55%	EXTREMELY HIGH																		
	VERY HIGH																		
	HIGH	*	*																
	MODERATE	***	***	***	**	*		**	**	***	*	*							
	LOW	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	NOT VISIBLE	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	AURORAL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun								
	INTENSITY	Eve.Twilight/Midnight/Morn.Twilight																	
	-----	-----																	

Middle Latitude Locations

CONFIDENCE LEVEL ----- 55%	EXTREMELY HIGH																		
	VERY HIGH																		
	HIGH																		
	MODERATE	*	*																
	LOW	***	***	***	*	*		**	**	*	*	*							
	NOT VISIBLE	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	AURORAL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun								
	INTENSITY	Eve.Twilight/Midnight/Morn.Twilight																	
	-----	-----																	

Low Latitude Locations

CONFIDENCE LEVEL ----- 65%	EXTREMELY HIGH											
	VERY HIGH											
	HIGH											
	MODERATE											
	LOW											
	NOT VISIBLE	***	***	***	***	***	***	***	***	***	***	***
	-----	---	---	---	---	---	---	---	---	---	---	---
	AURORAL	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
	INTENSITY	Eve.Twilight/Midnight/Morn.Twilight										

A Dynamic Auroral Oval Simulation and Prediction Software Package is available to help make predictions and show the locations where auroral activity should be visible from the ground. For more information regarding this software, contact: "Oler@Rho.Uleth.CA", or "COler@Solar.Stanford.Edu".

**** End of Report ****

End of Info-Hams Digest V93 #778